Rocks and Minerals

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ROCKS and MINERALS PEEKSKILL, N. Y., U. S. A.

The Official Journal of the Rocks and Minerals Association

Chips from the Quarry

A PLEA FOR VOLUNTEERS

Mr. and Mrs. Raymond Grossman, of Batesville, Ind., have a young son, Roy, who is intensely interested in minerals. Unfortunately for Roy, who is a member of the Rocks and Minerals Association, there is no other mineral collector in his vicinity nor even one good mineral locality. Nevertheless, he has collected quite an assortment of specimens of which he is very proud.

In a recent letter from the Grossmans, they tell us that though Roy is fascinated with minerals and reads every book obtainable on the subject, he gets so discouraged at times as to almost abandon collecting because he has no mineralogical friend to associate with. He is trying his best to build up a good mineral collection but lacking experience and living in a section that is poor in minerals and never having an opportunity to visit a museum or even another collector, he is all at sea with his collecting problems. A youngster who has never seen a mineral collection trying to make one! He certainly has the makings of a good collector!

The Grossmans have sent in a good suggestion which we feel sure will be received with much sympathy by our advanced collectors. They suggest that we list tne names and addresses of all our young members who are located in remote sections of the country (mineralogically speaking) and who need assistance with their collecting problems—and to call for volunteers from adult collectors, to visit once a year, one or more of the youngsters (those residing not too far away) for the purpose of examining their collections, identifying their unknowns, and giving them hints on labelling, arranging and displaying specimens.

These youngsters need encouragement and advice and they should be helped. Then, too, it would make them feel very happy and proud to have a noted collector call on them and examine their collections. We must not forget that most of us had to struggle in our younger days to attain knowledge in mineralogy and how grateful we were for any assistance given us by an adult collector. Let us in turn help some struggling youngster now! We also believe that this assistance should be extended to include those adults who are beginners in mineralogy.

All members of the Rocks and Minerals Association needing help with their mineralogical problems are requested to send in their names and addresses and, if under 21, state age. These names will be posted in Rocks and Minerals.

Here is the name and address of the first youngster:

Roy Grossman
(13 years old)
211 Park Ave.,
Batesville, Ind.

Who will be the first collector to call on him?

Peter Zodac

ROCKS and MINERALS

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FIFTY YEARS OF MINERAL COLLECTING FROM MAINE TO FLORIDA

By JAMES G. MANCHESTER

(Address at the Mineral Day at the World's Fair (New York City), June 17, 1940)

The first mineral collector either crawled out of a cave, or clambered down a tree, and among the first objects he appropriated for his own use were rocks and minerals owing to their applications for useful and decorative purposes. From that time to this, minerals have played an important part in the arena of humanity and the progress of civilization may be measured by the ability of man to discover in minerals the powers hidden within.

From the cradle to the grave modern man places his chief reliance upon minerals, or their derivatives. The first substances appropriated to the new born babe are mineral substances, boracic acid and nitrate of silver, dropped in weak solution in the eyes to prevent possible blindness, and vaseline, a petroleum product, applied to every other part of the body to soothe the tender skin and hasten its development. Everything man eats, wears, buys or sells, is composed of or produced by the aid of minerals, including the pen with which he signs his last Will. Eventually he will shuffle off this mortal coil on an iron bed and when his body is placed in the ground a rock will mark its last resting place, denoting that beneath that stone is a human body returning to the purely mineral environment from which it originated. Dust to dust.

In recent years more laymen have become interested in minerals and many new societies and clubs have been formed to promote the study of minerals. How can we account for this increased interest? Some say the depression,—people desiring an outlet for their leisure time. Personally, I believe the many new discoveries made involving the use of minerals, which have been given much space in the newspapers, has aroused interest and curiosity among laymen. Then again the schools are giving more time to this branch of the natural sciences, and there is that great organization, the Boy Scouts, from which are recruited many who take up minerals as a hobby. In recent years a number of magazines have been launched which give the story of minerals in a non-technical manner. All these have been factors in arousing an interest in minerals. It is reasonable, therefore, to expect that minerals should attract a large following.

Besides the utilitarian and scientific interest in minerals, there is their aesthetic beauty in which amateur mineral collectors are mostly interested. To the average layman mineralogy is thought to be a deep and difficult study. To appreciate and to understand minerals does not require long hours of study. Tramping over the fields and delving among the rocks in the search for specimens is a healthful diversion.

Longfellow says "All things come round to him who will but wait," but in collecting minerals if you are going to sit around and wait you cannot go places. The slogan of an advertising firm "Keep-

ing everlastingly at it brings success" it seems to me applies to the mineral collector. Recreational hours devoted to the collecting and the studying of minerals should not be permitted to encroach upon one's vocational hours. If you have a hobby, ride it, if the hobby rides you, failure in your vocation will result.

I have never regretted the day, when, as a very young man, I was shown a small collection of minerals; the owner of this collection presented me with a quartz crystal from Herkimer County, New York, and from that day to this minerals have been my hobby.

My first mineral crystal collected was found in a small vug or pocket in a glacial boulder of white quartz exposed at low tide on the shore of Narragansett Bay in Rhode Island. This boulder, after being broken away from its rocky ledge by the glacier coming down from the North, had been so rolled about that its angular outline had become much rounded and the rock deposited on the shore of the bay. That this crystal should remain loose in the pocket of this boulder which had been lapped by tidal waters for thousands of years, is beyond comprehension.

My guide and mentor in those early days of collecting, often told me of his collecting experience in Maine, that on one of his trips he brought home many specimens, so many in fact, that when he stepped off the train the bottom fell out of his box and the specimens were scattered about the station. This sounded rather intriguing to a beginner, but it was many years before I was able to visit Maine to find out that my friend was correct in his glowing description of the possibilities of collecting minerals in that State. Upon the occasion of my first visit I met Mr. Pulsifer, the owner of a feldspar mine on Mt. Apatite noted for the wonderful apatite crystals found there. He showed me one specimen, a crystal about 2½ inches in diameter. His price was $500. A few years later the same specimen turned up in New York and was being offered for sale at $400. Later I saw the specimen at Rutger's University, where Col. Washington A. Roebling had an exhibition of minerals recently acquired. Upon inquiry I found out that the Colonel and the mineral dealer could not come to an agreement as to the terms of the sale. The dealer left and Mrs. Roebling noted the discomfort of the Colonel at not being able to acquire the specimen. Mrs. Roebling arose to the occasion, however, and traced the specimen back to the miner from whom she purchased it at a cost of $250. and later presented it to Colonel Roebling on his birthday. The specimen is now lodged with the Roebling Collection at the Smithsonian Institution in Washington.

Of course all are acquainted with the story how the tourmaline deposit on Mt. Mica was discovered by two boys and to me this was a hallowed spot. Tourmaline, while a comparatively modern stone, has its legends and romances as interesting as some of the older stones. I well remember reading about the complexity of the chemical composition of tourmaline in Ruskin's "Ethics of the Dust", a series of lectures delivered at a girl's school. In telling of tourmaline, Ruskin writes:

"A little of everything;
There's always flint, and clay, and magnesia in it;
And the black is iron according to its fancy;
And there's boracic acid, if you know what that is, and if you don't, I cannot tell you today, and it doesn't signify;
And there's potash and soda;
And on the whole, the chemistry of it is more like a mediaeval doctor's prescription than the making of a respectable mineral."

Ruskin was an ardent collector of minerals and was a voluminous and passionate exponent of the beauties of nature as expressed in them. He was an inculcator in men's minds of all that is beautiful and lovely, both in nature and in art. He was a close associate of the pre Raphaelites and believed as they did that art

should render the spirit of nature truthfully.

The Portand, Connecticut, pegmatite quarries have always been of interest to the mineral collector. On one occasion I witnessed the destruction of a large pink beryl crystal by one of the quarry workmen. Soon after along came a teacher with a class of boys. The teacher told his class that the mineral was rose quartz but later changed his determination when he was advised that much of the coloring was due to blood from the cut fingers of a too enthusiastic mineral collector picking over the fragments for gem material. There are many interesting mineral localities in Connecticut, notably the cyanite at Judds Bridge, the garnets at Redding and the iron mine dumps at Roxbury.

A locality that stands out in my memory is the Diamond Hill section of Herkimer County, New York, noted for the remarkable quartz crystals found there. I shall never forget the sensation of walking over the newly ploughed fields in the early Spring, after a light rain, and there sparkling in the sunlight were those lustrous quartz crystals looking like gems from the lapidary, each one resting on its own pedestal of earth. The pioneers in building their stone fences in this area were not interested in the quartz crystals that fell out of the cavities when the rock was being broken but the modern collector searches along the stone walls to collect these gem-like crystals.

Fortunate indeed is the mineral collector who resides in the Metropolitan Area of New York City. Here are rocks of various geological horizons—sedimentary, igneous and metamorphic. Probably no other like area in the world has been subjected to such a vast artificial removal of rock thru engineering enterprises. In this area there have been operated from time to time no less than three hundred iron mines and twenty copper mines, but the discovery of richer deposits in other localities necessitated the abandonment of operations. In Colonial times the rocks provided the sulphuric acid and arsenic required in those days. Rich deposits of zinc and manganese are present and these mines have provided much wealth to their owners.

Several incidents stand out in my memory in connection with the collecting of minerals in this area. Entering late one Saturday afternoon an excavation on upper Broadway, where the rock was being removed for the erection of an apartment building, I saw in the material evidence of a feldspar crystal. The removal of this specimen was put over until the next day. During the night there had been a snowstorm and everything out of doors was covered with three or four inches of snow. Early that Sunday morning people on their way to church witnessed the strange sight of a man climbing over the rocks and brushing off the snow with a whisk broom. Eventually the rock was found and the crystal removed. The specimen turned out to be a remarkably well developed orthoclase crystal. The sequel to this Sunday morning romance was the receipt of a letter from the publishers of a well known encyclopedia asking permission to reproduce an illustration of this particular specimen in a forthcoming edition of the encyclopedia.

On another occasion there was a fine specimen of gem chrysoberyl found in an excavation at Broadway and 164th Street. There had been a thunderstorm that afternoon and after dodging in and out of doorways trying to reach home without getting wet, the sun came out and in examining the rocks in this particular excavation, which were black from the rain, there stood out against the dark background a yellowish-green chrysoberyl crystal. Many other gems and semi-precious stones have been taken out of the Manhattan rocks but time does not permit a detailed description except to say that the list includes aquamarines, golden beryls, spessartite garnets, citrine quartzes and brown tourmalines. The specimens themselves may be seen in the collection of local minerals sponsored by the New York Mineralogical Club on display in the American Museum of Natural History, New York City.

The hills of Westchester County, in the vicinity of Bedford, New York, are mined for mica, quartz and feldspar. These operations, begun by a discouraged farmer, have been actively worked for nearly seventy years. Upon the occasion of my first visit to the locality hand drilling was in use, black powder for blasting purposes, and a huge stone wheel crushed the ore, the power being furnished by a horse harnessed to the wheel and plodding along a circular pathway. This is a far cry from the modern mill in operation at the present time. The powdered rock is shipped to various industrial plants. In the removal of this rock many minerals of interest to the collector have been uncovered, some 52 varieties having been listed.

The Bedford locality is known for its fine rose-colored quartz, some of the material being suitable for cutting into ornaments. Just at the turn of the century, upon one of my visits, there were collected semi-transparent rose colored quartz. This was turned over to a lapidary for cutting and polishing and in the finished material was a polished sphere showing a six-rayed star by transmitted light. The story of this find was published and some years later similar material, mounted in jewelry, appeared on sale in jewelry stores. The material had been cut into spheres, the position of the star located and then cut into hemispheres, the backs of which were treated with quick-silver; the star is noted by letting the light enter the stone to be reflected from the mirrored or gilded back; the trade name of starlite was given to the stone, a name subsequently given to the blue zircon from Siam.

A number of radio-active minerals are found in the Bedford quarries. The most interesting of these is the mineral uraninite, a uranium oxide. An examination of the rocks will sometimes disclose a small black uraninite crystal surrounded by a brown halo on the matrix; this halo is caused by emanations from the radium content of the uraninite crystal. The mineral uraninite degenerates thru a series of minerals, of which radium is one, ultimately reaching the end product which is called uranium-lead. Physicists have computed the breaking up of the uranium atom and it is possible to make a computation as to the maximum age of any rock from the proportion of uranium and uranium-lead present. It is reported that such an analysis applied to the Bedford deposit has demonstrated that the age of the rocks in the Metropolitan area is vastly in excess or what the early geologists supposed.

Across the Hudson River there are the famous Palisades of the Hudson which have provided minerals of unusual interest, many of which are scattered in museums throughout the world. This trap ridge has been pierced by many tunnels and open cuts for transportation purposes, requiring the removal of a vast amount of rock. During the construction of the Erie Railroad "open cut" at Jersey City (1908-1911), I visited the workings nearly every Saturday afternoon for two years, regardless of weather conditions. Construction was conducted twenty-four hours a day in eight hour shifts. During these two years I met only one other collector, who, being busy during the day with his job as a house painter, had to confine his collecting to nights. On several occasions, when the days were growing shorter during the Winter months, I met him coming to the excavation with a lantern. He was an enthusiastic and discrimitive collector and many of his specimens found their niche in the Roebling and Canfield collections now in the Smithsonian Institution.

The most outstanding specimens collected in the Erie "open cut" excavation were some loose datolite crystals showing no point of contact with the matrix. These were found at the bottom of a small cavity. The problem was, how did these crystals form without showing evidence of attachment to a matrix? Upon examination with a pocket magnifier, it is noted that running through the crystals are fine threads of an abestiform mineral. No doubt when the solution in this cavity was changed to a solution that would produce datolite crystals the

threads of asbestus still ran across the cavity and it was around these threads that the crystals were formed. When the solution evaporated the crystals fell to the bottom of the cavity where they were found.

We all know of the wonderful minerals collected in the Watchung trap rock quarries of New Jersey. The mineral that I remember mostly is a specimen of natrolite collected at the lower New Street quarry in West Paterson. One Saturday morning, many years ago, I called Mr. Gratacap, then curator of minerals at the American Museum of Natural History, and asked if the West Paterson quarry had renewed operation for the season. He said, yes, that a collector had been in to the museum the day before and showed him some splendid natrolites that had just been taken out. I visited the quarry that afternoon and found evidences of someone having recently worked in one of the cavities. I took up the work where the previous collector had left off and after a while removed from the cavity a very fine cluster of natrolite crystals. Natrolite, when conditions are right, has a tendency to crystallize out in bunches of crystals looking like pom-poms or hemispheres. This particular specimen I had taken out was half a hemisphere. When it was illustrated in a recent bulletin of the New York Mineralogical Club I received a letter from the curator of minerals in a foreign museum saying that he felt quite sure that they had the other half of my specimen in their museum. After some correspondence it was decided that this was so. There were very few collectors in those days and who the particular person was that worked the cavity the day before has never been found out as it was many years after the occurrence that the matter was brought up.

The clay pits in this area are not without interest to collectors. I know of nothing more thrilling than that experienced in breaking open the siderite or clay ironstones found in the clay pits of New Jersey. To break open one of these stones in the bright sunlight and watch the moisture disappear and the sparkling pyrite crystals with their iridescent colors slowly come to view is a joy reserved only for those fortunate enough to be present.

Time permits the mention of only one more locality. Very many years ago I sent from my New England home a few cents to a mineral dealer in New York City and obtained a specimen labeled "Chalcedony pseudomorph after coral, Tampa Bay, Florida." This particular specimen acquired in those early days seemed so attractive that throughout all these years I have had a desire to visit the locality where this specimen came from. After a lapse of more than forty years this desire has been fulfilled and for the past four winters many pleasant hours have been spent collecting in the vicinity of Tampa and the experience gained is the culmination of all collecting that had gone on before. The specimens are found during a very low tide in what are known as the silex beds at Ballast Point in Hillsborough Bay, not Tampa Bay. The local residents know nothing, or care nothing about them. The locality has been the mecca for collectors for over one hundred years. The varieties of chalcedony noted are sard, sardonyx, blackonyx, carnelian, agate, flint and chert. Much of the material is suitable for cutting into semi-precious stones for jewelry mounts. There is an endless display of color. To collect successfully one must depend upon the wind, the water, the tide and the moon. It is rare indeed that these elements will co-operate for the benefit of mineral collectors.

As I said at the beginning my first quartz crystal was found in a glacial boulder exposed at low tide and probably what may mean my final collecting days were spent in tidal waters gathering these remarkable specimens in Florida, — an unusual experience, that one's mineral collecting over a long period of time should begin and end in the water, almost the last place to look for mineral specimens.

We who collect minerals as a hobby

have much to be thankful for. Our interest takes us from what may be called the drudgery of an everyday existence. We see in these mineral crystals a continual struggle for perfection; they show the marvellous work of Mother Nature produced when she was in one of her best moods. To study and to ponder over these creations is a diversion that cannot help but make this a happier world to live in and the approaching night seem but the awakening of a new dawn. It's been a great life.

Editor's Note: Mr. Manchester is one of America's most noted collectors. He is author of *Minerals of New York City and Its Environs*, a book which has become immensely popular with collectors.

GEODE LOCALITY IN OHIO

By HOWARD R. GOODWIN

Curator of Minerals, Ohio State Museum

While most mineral collectors are familiar with the geodes found in Indiana, Illinois, Missouri and Iowa, perhaps there are few who are aware of the occurrence of geodes in Ohio. Within the last few years, however, the writer has made a number of trips to Highland and Adams counties, in Ohio, where, released by decomposed limestone, numerous fossil corals and other marine organisms are found loose in the soil. Among these fossils some interesting and attractive geodes have been found and now are to be seen in the collections of the Ohio State Museum, Columbus, Ohio.

While many specimens proved to be solid chert or crystalline quartz when broken open, some were composed of concentric layers of crystallized quartz slightly separated from each other allowing development of the crystals on each side. The unbroken specimens of this type present the appearance of gigantic puff-balls, some having well defined stems. The outer surface is generally smooth with scattered holes and shallow pittings which suggest some form of sponge, while in size they range from two to six or more inches in diameter. Some contain more or less black powder in small cavities or between the quartz layers. Others have asphaltum which gets very sticky in a warm room and these are not recommended for the cabinet.

Silicified corals of irregular and hemispherical form, the outer surface showing the coral cells perfectly preserved, usually prove to be real geodes, the inner walls lined with sparkling quartz crystals or botryoidal chalcedony. At times a single crystal of calcite is implanted on the quartz, or a cavity may be completely filled with a mass of calcite.

In some cases curved plates of crystallized quartz are arranged in such way as to suggest a partly opened flower, but these are rare. A lucky break will often expose a dome of crystals in one half while the other half forms the roof, all covered with glittering quartz. Many of the large concretions of the Ohio shales prove to be geodes, some having several cavities, the walls are usually lined with pearlspar though quartz is not rare. It is not unusual to find calcite or barite crystals in singles and groups implanted on the pearlspar or quartz and in one case calcite, selenite, barite and pyrite crystals were scattered over the pearlspar. The two latter mentioned however are in a bad state of decomposition.

The specimens in the museum collection represent many trips and a deal of hard work and are the result of an undying interest in the pursuit of mineral specimens.

READING HILLS TOUR

A mineralogical tour through the jasper localities of Eastern Pennsylvania will be held on Sunday, Aug. 25, 1940.

See page 275, this issue, for more particulars.

1939 AMERICAN GEOLOGY BOOKS—AN ANNOTATED LIST

By FRANKLIN B. HANLEY
Department of Geology and Mineralogy
University of Minnesota

Geological literature has been enriched during the past year by the publication of several notable and many worthwhile books. Most of the divisions or fields of the science are represented and the volumes range from non-technical exposition to highly specialized monographs. More than the usual number of revised editions of previously published books made their appearance during 1939.

Geomorphology, i. e., physiography of the lands, and Sedimentation were presented with adequate textbooks. Both fields have long needed summary treatments of present-day concepts. Paleontology received a noteworthy addition in Raymond's *Prehistoric Life*. This and Lobeck's *Geomorphology* are especially recommended for the personal library of those geologically minded. They represent the two "best buys" of the year of permanent general interest.

In passing it is interesting to note that during 1939 the two most widely used texts on physical or "general" geology were revised. Both the "Minnesota" and the "Yale" books, as they are sometimes colloquially called, are excellent. Although possibly swayed by local pride, the reviewer prefers the former because of its organization and simple, forthright style. Rather remarkably, this new edition is reduced both in content and in price.

An annotated list of American books on geological or closely related subjects published during 1939 follows. The many bulletins and other reports of the federal and state geological surveys and the specialized monographs of the various scientific societies are not considered here.

GENERAL TEXTS

Allen, Victor T. *This Earth of Ours.* 364pp. Bruce. $3.50.

A most acceptable treatment of both physical and historical geology. Briefer than the standard texts and written with an eye on the 'intelligent layman." The author, a graduate of the University of Minnesota, is professor of geology at St. Louis University.

Emmons, W. H., Thiel, G. A., Stauffer, C. R., and Allison, I. S. *Geology Principles and Processes, 2nd ed.* 451pp. McGraw-Hill. $3.75.

Considered by many to be the best modern introduction to physical and dynamic aspects of the science, this widely used text has been strengthened and improved by revision. The book was prepared in the Department of Geology and Mineralogy of the University of Minnesota.

Longwell, Chester R., Knopf, Adolph, and Flint, Richard F. *Textbook of Geology — Part I—Physical Geology, 2nd ed.* 543pp. Wiley. $3.75.

A second edition of the current "Yale" book on physical geology—a direct descendant of the volumes by Professor L. V. Pirsson. Somewhat larger than the corresponding "Minnesota" book. Currently, it is the most widely used text in the field.

Miller, William J. *Elements of Geology, 2nd ed.* 516pp. Van Nostrand. $3.50.

A new edition of Professor Miller's abridged text designed for briefer courses. Covers both the historical as well as physical division of the science, but the two parts may be obtained separately. Geologically sound but the style verges on the ponderous. The author teaches at the University of California at Los Angeles.

GEOMORPHOLOGY

Johnson, Douglas. *The Origin of Submarine Canyons.* 126pp. Columbia Univ. Press. $2.50.

This monograph is a critical review of the hypotheses advanced to explain the

origin of the deeply submerged canyons which indent the seaward margins of many continental shelves. Although the author, professor of phyiography at Columbia University, favors his own idea of the sapping action of artesian springs, his treatment is a model demonstration of what T. C. Chamberlin called "the method of multiple working hypotheses", i. e., thoroughly exploring all possible ideas.

Lobeck, A. K. *Geomorphology.* 731pp. McGraw-Hill. $4.50.

A truly noteworthy publication dealing with the 'science of scenery." Profusely illustrated with large photographs and a notable collection of the author's own famous pen sketches and diagrams. Very acceptable as an undergraduate college text, and of real interest to all who want to know more about the development of the landscape. Highly recommended by the reviewer. The author is professor of geology at Columbia University.

Worcester, Philip G. *A Textbook of Geomorphology.* 565 pp. Van Nostrand. $4.00.

A sound and creditable work, well illustrated. More strictly a text than the Lobeck book but of considerable interest to the general reader. For many years the author has taught courses in physiography at the University of Colorado.

PALEONTOLOGY

Darrah, W. C. *Textbook of Paleobotany.* Appleton-Century. $6.00.

Although a copy was not available to the reviewer, it is understood the book is designed as a textbook for a course in the study of fossil plants. The author is research curator in the Harvard University Museum.

Johnson, Gaylord. *How Father Time Changes the Animal Shapes.* 185pp. Messner.

A fascinating, well-illustrated book which vividly dramatizes the changing structures of the vertebrates with the passing of geological time. Designed for the younger reader, but all older ones may read it with profit and enjoyment.

Raymond, Percy E. *Prehistoric Life.* 324 pp. Harvard Univ. Press. $5.00.

One of the notable geology books of 1939. Essentially Professor Raymond's course in Paleontology at Harvard, it traces the history of life from its first appearance on the earth to the present and makes the subject matter, which at times is quite technical, vivid and real. Written in a relatively light and inviting style, this is *the* book for use in developing a comprehensive background for the study of fossils.

MINERALOGY AND PETROLOGY

English, George L. *Descriptive List of the New Minerals.* 258pp. McGraw-Hill. $3.00.

An invaluable reference book for the specialist in technical mineralogy. It is an alphabetical compilation of all new mineral names and pertinent data since the publication of the 6th edition of Dana's *System of Mineralogy* in 1892. The author is a well known mineralogist and until his retirement was a member of Ward's Natural Science Establishment.

Johannsen, Albert. *A Descriptive Petrography of the Igneous Rocks, Vol I* Introduction, Textures, Classifications, and Glossary, 2nd ed. 318pp. Univ. of Chicago Press. $4.50.

A slightly altered edition of Professor Johannsen's treatise for the advanced student. A newly added glossary of rock names increases the book's reference value. The author is emeritus professor of petrology at University of Chicago.

Kraus, Edward H., and Slawson, Chester B. *Gems and Gem Materials, 3rd ed.* 287pp. McGraw-Hill. $3.50.

A new edition of the widely used technical book prepared at the University of Michigan. Of at least casual interest to every lapidary and amateur mineral collector as well as jeweler. Also those wanting to know more about the stones in their jewelery can examine it with profit.

Tickell, Frederick G. *The Examination of Fragmental Rocks, 2nd ed.* 154pp. Stanford Univ. Press. $4.00.

A revised edition of a specialized book dealing with technical procedures used in the study of sands and other fragmental rocks and minerals. The author is professor of petroleum engineering at Stanford University.

Trask, Parker D. Editor. *Recent Marine Sediments.* 736pp. Amer. Assn. Pet. Geol. $5.00.

This symposium was prepared by a group of specialists under the sponsorship of the National Research Council, Washington, D. C. It is a valuable contribution, but because of its technical nature it is of limited appeal.

Twenhofel, W. H. *Principles of Sedimentation.* 610pp. McGraw-Hill. $6.00.

A comprehensive discussion of sediments and the problems involved in the formation of sedimentary rocks. May be profitably examined by those who want to know more about the mode of origin and inherent structures of sedimentary rocks.

ENGINEERING AND ECONOMIC GEOLOGY

Ligget, Robert F. *Geology and Engineering.* 650pp. McGraw-Hill. $4.50.

A book welcomed by engineers and those interested in the geological aspects of engineering. Good reading for those who want to visualize the application of geology especially to civil engineering work. The author is a member of the civil engineering department of the University of Toronto.

Roush, G. A. Editor, *Strategic Mineral Supplies.* 473pp. McGraw-Hill. $5.00.

A matter of fact, meaty discussion of our supplies of manganese, nickel, tin, tungsten, aluminum, antimony, mercury, and other vital minerals. Stress is on the economic rather than the geologic point of view. As editor, for many years, of the annual Mineral Industry volumes, Mr. Roush can write with authority on this important subject.

Runner, D. S. *Geology for Civil Engineers. Gillette.* $5.00.

Book announced but a copy not available to the reviewer.

HISTORY OF GEOLOGY

Adams, Frank Dawson. *The Birth and Development of the Geological Sciences.* 506pp. Williams & Wilkins. $5.00.

Although dated December 1938, this book was not generally available until 1939. Professor Adams of McGill University rendered a real service in writing this history of geologic thought. The pre-modern phases of the science are treated rather fully and, with possible disappointment to some, the discussion concludes with the beginning of the present century. Even the casual student of geology will find browsing in this book profitable.

Mather, Kirtley F. and Mason, Shirley L. *A Source Book in Geology.* 702pp. McGraw-Hill. $5.00.

A compilation of significant passages from the works of 130 writers who have during the last four centuries influenced geologic thought and trend. A brief biographical sketch of each quoted author heads the excerpt. Chiefly of historical interest as current texts are the preferred source of scientific information for the non-professional geologist. The senior author is chairman of the Department of Geology at Harvard University.

Warner, C. A. *Texas Oil and Gas Since 1543.* 487pp. Gulf Pub.

This is a comprehensive detailed history of the petroleum industry in Texas. It contains many charts and tables but also much to interest the casual reader. The author is a competent geologist with the Houston Oil Company of Texas.

MISCELLANEOUS

Bennett, Hugh H. *Soil Conservation.* 993pp. McGraw-Hill. $6.00.

Soil erosion is an accelerated geologic process. Here is an authoritative and scholarly discussion by the man who has done more than any other individual to

make the country conscious of this national menace. First takes up the problem and then the treatment; well illustrated. Mr. Bennett is chief of the Soil Conservation Service of the U. S. Department of Agriculture.

Gutenberg, Beno Editor, *Internal Constitution of the Earth.* 413pp. McGraw-Hill. $5.00.

This is one of a series of monographs on the Physics of the Earth sponsored by the National Research Council, Washington, D. C. It is a collection of technical articles dealing with the nature and condition of the interior of the earth in the light of modern geophysical data.

Huebner, Walter. *Geology and Allied Sciences — Part I. German-English.* 405pp. Veritas. $7.50.

In spite of its cumbersome and somewhat misleading title, this is the best and most complete dictionary available for use in translating German geological literature into English. Some 25,000 terms are given.

Reed, William Maxwell. *America's Treasure* edited by Carey Croneis. 395pp. Harcourt. $3.00.

Book not available to the reviewer, but the announcement indicates that it is an exposition of the mineral resources of the United States written for young people in a suitable style.

Verrill, A. Hyatt. *Minerals, Metals, and Gems.* 293pp. Page. $3.00.

A copy not available to the reviewer, but the announcement states that the purpose of the book is to tell the interesting and frequently strange stories of some of the most important and best-known minerals.

CORRECTIONS

On page 231 of the July, 1940, issue of *Rocks and Minerals,* the name of Dr. William S. Newcomet appears as the author of a short item entitled "A New Find of Vermiculite in New York City." The Doctor's name should have appeared on page 232 as the author of "Observations of some old Micromounts." In the table of contents of the same issue Dr. Newcomet is correctly credited with the authorship of his very interesting article.

On page 248 of the same issue, in the Warner & Grieger advertisement, the price for a Vreco Diamond Saw Unit with a 12" blade was listed at $3.50 F. O. B. Portland, Oregon. The price should have read $30.50.

These errors turned up in the proof and were corrected but owing to the confusion and upset condition in the plant of our printers, occasioned by the fire, they were evidently overlooked. We deeply regret the errors.

MUSEUM SECURES FOSSIL BEAVER

A mounted skeleton, of the giant fossil beaver known to scientists as Castoroides ohioensis, has been added to the paleontological exhibits at Field Museum of Natural History, Chicago, Ill. The skeleton was found near Fairmount, Indiana. The animal, which in life would have been nearly as large as the modern black bear, lived in the period following the last glacial advance, according to Elmer S. Riggs, curator of paleontology.

The giant beaver was one of the largest of all rodents, states Mr. Riggs. Only the Field Museum specimen and one other completely preserved skeleton are known. As the name ohioensis indicates, the first specimen was discovered in Ohio.

MINE PRODUCTION OF SILVER IN THE UNITED STATES, 1939—PRELIMINARY ANNUAL FIGURES

The total mine production of recoverable silver in the United States (Territories included) in 1939 was 65,011,770 fine ounces valued at $44,129,201, an increase of 3 percent in quantity and 9 percent in value over 1938, according to preliminary figures of the Denver Office of the Bureau of Mines, United States Department of the Interior. The increase in 1939 resulted from a rise in production of copper, zinc-lead, and lead ores following the advance in base-metal prices in the latter part of the year. Such ores yielded nearly half of the domestic silver produced in 1938 and considerably more than half of the total in 1937 when the output of copper, lead, and zinc was higher. The price of domestic silver mined after July 1, 1939, was increased from $0.646+ per ounce (the price in effect from December 31, 1937, through June 30, 1939) to $0.711+ by an Act of Congress approved July 6, 1939; the average price paid for silver in 1939 was $0.678+.

Idaho was the leading silver-producing State in 1939, as in each year since 1933, and contributed 26 percent of the total domestic output. Utah ranked second, with 16 percent; followed by Montana, 14 percent; Colorado, 13 percent; Arizona, 12 percent; Nevada, 6 percent; California, 4 percent; New Mexico, 2 percent; and Texas, 2 percent.

The table on page 267, covering mine production of silver in 1938 and 1939, and brief State reviews of mining operations were summarized from current reports of the western field offices of the Bureau of Mines. Individual State reviews are available upon request.

Alaska.—In Alaska silver is produced only as a byproduct of gold and copper mining. In 1939 the output of silver decreased over 50 percent from 1938, owing almost entirely to the abandonment late in 1938 of the copper properties of the Kennecott Copper Corporation at Kennecott. Gold lode mines, of which the Alaska Juneau is by far the largest, produced the bulk of the silver in 1939; placer mines scattered throughout the Territory produced the rest.

Arizona.—Copper ore mined at Bisbee, Jerome, Ajo, and Superior yielded 63 percent of the total silver produced in Arizona in 1939, and nearly half of the State output came from the Copper Queen (Bisbee) and United Verde (Jerome) mines of the Phelps Dodge Corporation. Other important sources of silver were zinc-lead ore from the Oro Blanco, Harshaw, and Wallapai districts; silver ore from Ash Peak and Pioneer districts; and gold and silver ores from the Wallapai, Big Bug, Black Canyon, Eureka, and Tombstone districts.

California.—The bulk of the silver output from California in 1939 was obtained as a byproduct of gold and copper mining. The Mojave district in Kern County was the principal silver-producing district in the State.

Colorado.—Colorado, with an output of 8,393,642 fine ounces of silver in 1939, ranked fourth (following Idaho, Utah, and Montana) among the States in silver production. Eagle County produced 71 percent of the State total, from copper-iron-silver-gold ore; Mineral and Pitkin Counties combined 10 percent, from dry and siliceous silver ore; San Miguel and Ouray Counties combined 9 percent, chiefly from gold-silver-lead-copper ore; and San Juan County 3 percent, from gold-silver ore containing some copper, lead, and zinc. Other counties producing over 100,000 ounces of silver were Clear Creek and Lake.

Eastern and Central States.—The leading silver-producing States among the Eastern and Central States in 1939 were: Missouri, 213,397 ounces; Michigan, 93,200 ounces; New York, 37,165 and Tennessee, 32,200 ounces.

Idaho.—The Sunshine mine, 3 miles southeast of Kellogg in Shoshone County, Idaho, is the largest silver-producing mine in the United States; its output in

1939 was 9,333,000 ounces, or 54 percent of the State total. Other large producers of silver included the Bunker Hill & Sullivan, Polaris, Triumph, Morning, Hecla, Crescent, Page, Coeur d'Alene, Clayton, and Gold Hunter mines all in the Coeur d'Alene region except the Triumph (in the Warm Springs district of Blaine County) and the Clayton (in the Bay Horse District of of Custer County.) The Polaris Mining Co. and the Hecla Mining Co. reported large decreases, but the Federal Mining & Smelting Co., Coeur d' Alene Mines Corporation, and Snyder Mines, Inc., reported substantial increases.

Montana.—The output of silver from Montana increased 39 percent in quantity and 46 percent in value in 1939 over 1938. Silver from the Butte district increased more than 2,000,000 ounces, as the output of both copper ore and zinc-lead ore increased. Silver from the Philipsburg area increased slightly, as gains at the Granite Bimetallic and Silver Prince mines more than offset losses at the Trout and Two Percent mines.

Nevada.—A 7 percent decrease from 1938 in the quantity of silver produced was recorded in Nevada in 1939. The Nivloc mine in the Silver Peak district, operated by Desert Silver, Inc., yielded nearly one-third of the State total. The Consolidated Coppermines Corporation (and its lessees), the Nevada Consolidated Copper Corporation, and shippers of argentiferous siliceous ores to the McGill smelter for fluxing purposes produced substantial quantities of silver from the Robinson district. Other important silver producers were the Combined Metals Reduction Co. from zinc-lead ore mined at Pioche and the Bristol Silver Mines Co. from silver ore mined in the Jack Rabbit district, both in Lincoln County; and Sutro Tunnel Coalition, Inc., the Consolidated Chollar Gould & Savage Mining Co., and the Dayton Consolidated Mines Co. along the Comstock Lode.

New Mexico.—Siliceous silver-gold ores from the Mogollon (Catron County) and Steeple Rock (Grant County) districts yielded approximately 49 percent of the 1,423,480 ounces of silver produced in New Mexico in 1939. The other principal sources of silver were zinc - lead - silver - copper ore from the Central district, Grant County; zinc-lead-copper-silver-gold ore from the Pecos mine in the Willow Creek district, San Miguel County; and copper-gold-silver ore from the Lordsburg districts Hidalgo County.

Oregon.—The silver output of Oregon in 1939 was recovered entirely as a by-product of other metals, principally gold; aproximately three-fourths of the State output was recovered by Cornucopia Gold Mines at Cornucopia.

South Dakota.—The silver output of South Dakota in 1939 was a byproduct from gold mines; the principal producers were the Homestake Mining Co. at Lead and Bald Mountain Mining Co. at Trojan, both in Lawrence County.

Texas.—The Presidio silver mine of the American Metal Co. at Shafter continued in 1939 to produce the bulk of the silver output from Texas. Other mines, mostly in the vicinity of Allamoore and Van Horn in Hudspeth and Culberson Counties, yielded a total of about 40,000 ounces.

Utah.—Silver from Utah (10,574,987 ounces in 1939) showed a 9 percent increase in quantity over 1938. Silver from the Bingham district increased about 478,000 ounces and from Park City 226,000 ounces, but silver from the Tintic district decreased 402,000 ounces. Tooele County showed a marked increase. The United States & Lark property was again the leading silver producer in Utah; it was followed by the Tintic Standard, Utah Copper, Silver King Coalition, Park City Consolidated, Ophir Hill, and Chief Consolidated properties. These seven properties yielded 73 percent of the State total.

Washington—Most of the 16— percent increase in the silver output of Washington in 1939 came from the Holden Mine, in Chelan County, which yielded more than 40 percent of the State total; the bulk of the remainder came from Mines at Republic, including the Aurum, Knob Hill, and Eureka groups.

Mine production of silver in the United States, 1938-39, by States

State or Territory	Fine Ounces		Increased or decreased in quantity in 1939		Value	
	1938	1939	Fine ounces	Per cent	1938 (at $0.646 per ounce)	1939 (at $0.678 per ounce)
Western States and Alaska:						
Alaska	479,853	209,300	— 270,553	— 56	$310,208	$142,070
Arizona	7,479,153	7,975,540	+ 496,387	+ 7	4 835,008	5,413,700
California	2,590,804	2,612,000	+ 21,196	+ 1	1,674,863	1,772,994
Colorado	7,932,095	8,393,642	+ 461,547	+ 6	5,127,819	5,697,502
Idaho	18,993,676	16,199,600	— 1,794,076	— 9	12,278,740	11,674,880
Montana	6,403,962	8,898,450	+ 2.494.488	+ 39	4,139,935	6.040,160
Nevada	4,355,471	4,066,000	— 289,471	—7	2,815,658	2,759,951
New Mexico	1,229,860	1,423,480	+ 193,620	+ 16	795,061	966,241
Oregon	100,507	101,000	+ 493	.....	64,974	68,558
South Dakota	162,295	168,600	+ 6,305	+ 4	104,918	144,444
Texas	1,433,008	1,349,709	— 83,299	— 6	926,389	916,166
Utah	9,682,732	10,574,987	+ 892,255	+ 9	6,259,544	7,178,173
Washington	380,938	442,200	+ 61,262	+ 16	246,263	300,160
Wyoming	328	75	— 253	— 77	212	51
	61,224,682	63,414,583	+ 2.189,901	+ 4	39,579,592	43,045,050
Eastern States:						
Alabama	4	.....	— 4	—100	3	.....
Georgia	71	78	+ 7	+ 10	46	53
Maryland	24	3	— 21	— 88	16	2
New York	37,200	37,165	— 35	.....	24,048	25,227
North Carolina	5,500	3.650	— 1,850	— 34	3.556	2,478
Pennsylvania	9,360	12,926	+ 3,566	+ 38	6,051	8,774
South Carolina	3,951	5,640	+ 1,689	+ 43	2,554	3,828
Tennessee	38,333	32,200	— 6.133	— 16	24,781	21,857
Virginia	502	1,780	+ 1,278	+255	325	1,208
	94,945	93.442	— 1.503	— 2	61,380	63,427
Central States:						
Illinois	576	480	— 96	— 17	372	326
Michigan	93,634	98.200	— 434	....	60,531	63,263
Missouri	292,000	213,397	— 78,603	— 27	188,768	144,851
	386,210	307,077	— 79.133	— 20	249,671	208,440
Philippine Islands	a1,167,612	b1,196,664	+ 29,052	+ 2	754,820	812,281
Puerto Rico	1	4	+ 3	+300	1	3
	1,167,613	1,196,668	+ 29,055	+ 2	754,821	812,284
Total	62,873,450	65,011,770	+ 2,138,320	+ 3	40,645,464	44,129,201

a—Division of Statistics, Department of Agriculture and Commerce, Manila.

b—Refinery receipts.

By Chas. W. Henderson, Denver Office, Mineral Production and Economics Division.
H. Herbert Hughes, Chief Economist.

A dendrite is a figure produced on the smooth surfaces of some minerals and taking the form of a branching pattern resembling a tree or shrub. Pyrolusite, a black manganese oxide, frequently forms dendrites which are common at many quarries.

A dendrite is *not* a petrified leaf as some people believe.

What is of more interest than one fine mineral specimen? Ans. Two fine mineral specimens.

A PETRIFIED WOOD LOCALITY IN ARIZONA

By WALTER MAYES

A visit to the Arizona Petrified Forest ought to be and is, a very interesting and instructive experience. But to the "Rock Hound" it is singularly lacking in thrills. As all such natural phenomena under Government supervision are patrolled, the visitor is much restricted in his actions. He has to respect the scenery and to keep hands strictly off the petrified specimens, which is really for the best as otherwise there would soon be nothing for any one to see.

When the Forest was first opened to the public by the Government, I had the good fortune to make a visit there. We were allowed to wander at will and to carry away small loose fragments of petrified wood. Since then, and expecially during the past few years when I have been extremely interested in minerals, I have wanted to revisit and reexamine the area in an unrestrainted and unsupervised manner.

In 1937, my wish was granted. When nearing the entrance to the forest, we found the highway was being repaired and so had to make a detour through a pasture. As I had been told that there were many petrified logs outside the Government supervised Forest, I was on the look out for them. As we went up a small hill I saw what looked like the outcrop of a log. We hastily parked the car and then got out to investigate our find. Much to our amazement we soon saw log after log lying plainly exposed to view. We had only a short time to spend but made good use of the time and acquired several pounds of chips. We hadn't any hammer so could only pick up loose fragments.

When we arrived home and had polished our specimens, we found that while they were nice in the rough they lacked contrast and were hardly worth polishing.

In 1939, when we had occasion to go that way again, we allowed more time and took hammers. We broke fragments here and there for perhaps two hours without finding anything very interesting. Finally, near the crest of one of the hills I found several pounds of a small limb with good contrasty material. Just as I was getting the last of it, my wife called that she had found some nice stuff. Sure enough she had—a knot with delicate lovely markings. If the log which contained this knot could have been moved and the knot sawed out, it would have made a most wonderful specimen. However the weight was perhaps well over a ton so all we could do was to break the knot out as best we could. The largest well marked piece weighed one-fourth pound. There were several almost as large and many small pieces.

Any one who cares to do so may visit the locality and have perhaps as good or even better fortune than we. While the location is in fenced pasture, there was no "No Trespass' sign up when we were there nor is one likely to be put up unless collectors get careless, do damage to the fence or leave th gate open.

Directions for finding this location are: After leaving the Arizona Petrified Forest at its western boundary—i.e. you are making the trip from East to West—go on State Highway in the direction of Holbrook for about a mile, perhaps a little less, when the road goes down a hill. There is a filling station on the left just before you come to the down grade, which has a large number of petrified wood specimens for sale. Continue down this grade until almost to the bottom-about a hundred yards. You can not park on the grade and there are "No parking" signs up. You will find you have passed a small hill on your right (the east side of the road). Climb through the fence. Don't use the gate. Circle the hill keeping to your left and you will find yourself facing a small nest of hils. These are about 50 or 60 feet high and have an extent of only a few blocks.

THE MOST BEAUTIFUL QUARTZ CRYSTALS

By DONAL HURLEY

Nearly a century ago when Lardner Vanuxem wrote the *Geology of the Third District*, as part of the printed works on the Natural History of New York State, he remarked that there is probably no locality in the world which produces more perfect or more beautiful quartz crystals than Middleville; and with an equal refraction power they would rival the diamond. In one of the most recently published books on the quartz crystal family, the clear brilliant crystal called "Herkimer Diamond", especially that found near Middeville, is just as strongly declared the finest of the quartz crystal group. Thus, over a span of a hundred years, the "Herkimer Diamond" of the Middleville area has held sway as the beauty of a beautiful crystal line.

Middleville, being only a few miles from my home city of Little Falls, is easy to reach and I have made frequent field trips to it. The quartz crystals have been found in cavities in the calciferous sandrock or free in the earth as a result of being weathered out of their matrix. The rock at Middleville is much harder than most of the same type rock in nearby localities, which might account for the more brilliant crystals found there.

My field work disclosed three localities. One on the north side of the road between Middleville and the village of Newport. The formation is several hundred feet thick, as judged by the exposed outcroppings, and extends in a northwesterly direction bordering the north side of a glacier valley, starting almost at the limits of Middleville and continuing for several miles toward Newport. A second location, not so extensive, is from within the village of Middleville eastward for over a mile, and along the left of the highway towards the village of Fairfield. The third and best location is the several hundred feet thickness of outcropping rock that forms a sloping hill on the west of the highway between the city of Middleville and Herkimer. The rock formation starts about thre miles south of Middleville, and extends north right into the village.

The crystals were formed in cavities in the rock. These cavities vary in size from a fraction of an inch pockets to a minature cave that yielded a half bushel of "diamonds." But the crystals found in the larger pockets are, as a rule, not so perfect or as good a quality as those found in the smaller cavities. Besides rock crystals, I have found other minerals associated in the cavities, especially calcite and anthracite.

The crystals themselves belong to the hexagonal family of doubly terminated quartz. Each of the eighteen facets is shaped so sharply and of such clear brilliance as to rival expert cutting and polishing. An added interest from the collecting point, is the many variations of twins effected by these crystals. Also the mineral inclusions of dolomite, siderite, iron sulphide, and others; the crystal within a crystal; facet etchings; mimics (I have one of anthracite well centered in a crystal that pictures a man leading an elephant); and, of course, the moving bubbles. All of which makes these quartz crystals not only the finest in the world, but probably, also, the most fascinating to collect.

Willbur at Geology Camp

Robert Wilbur, of Waynesboro, Va., (who attends Washington and Lee University at Lexington, Va.) is enrolled for the summer in the Geology Camp conducted by Princeton University (Princeton, N. J.) at Red Lodge, Mont. Mr. Wilbur is specializing in mineralogy and he plans to visit localities in the Bad Lands, Black Hills and the Yellowstone National Park before camp is closed.

Otersens Have Fine Collection

Ken Pugsley, of Pawling, N. Y., and Peter Zodac, Editor of *Rocks and Minerals*, while on a recent tour of some Connecticut localities, called on Mr. and Mrs. William Otersen, of West Haven, Conn., to see their mineral collection which has an envious reputation. The collectors were truly amazed over the excellence of the specimens and the artistic layout of the collection.

THE REJUVENATION OF TARNISHED CHALCOPYRITE

By O. IVAN LEE

In a previous article*, it was pointed out how native copper obscured by unsightly secondary minerals might be cleaned and restored to its pristine metallic appearance through treatment with caustic alkali Rochelle salt solution. Recently an old time specimen of chalcopyrite from Cornwall, England, was acquired, associated with quartz and calcite. The tetrahedral crystals were large and well developed but covered with a coal-black coating most depressing to see in a mineral which normally surpasses even "Fool's Gold" in color and luster. The black film appeared to be very thin but firmly adherent, resisting all attempts at removal through rubbing, scraping and abrasion. Here and there where chipped, however, the unaltered underlying material gleamed like gold, and our previous experience suggested that perhaps something could be done to remove the offending coating through suitable selective chemical treatment. There was no occasion to worry about the effect of reagents on the quartz, but calcite is far more susceptible, so that initial experiments were made by applying the various solutions tested to one side of an isolated chalcopyrite crystal with a camel's hair brush, and noting the effect, each reagent being left on for several minutes and then removed by washing. Alkali Rochelle salt solution, saturated oxalic acid solution and ten per cent. hydrochloric acid were all tried in turn, but with no visible result. Nitric acid was not considered safe since it is known to attack chalcopyrite. The general behavior of the coating towards the solutions aforementioned seemed indicative of its being cupric sulfide rather than oxide, so a little sodium cyanide solution was then tried. The effect was almost magical. The black coating disappeared at once exposing the typical brassy color and luster of chalcopyrite, and our search was ended.

It remained only to immerse the whole specimen in a dilute (2%) solution of sodium cyanide (potassium cyanide will, of course, serve equally well) for a few minutes *until the brassy color and luster attained a maximum,* then remove, wash, soak for an hour or longer in running water, rinse and dry. So far as could be judged, th dilute cyanide solution has no deleterious action on bright chalcopyrite itself, but many blackened crystals are not smooth but have a matte surface more or less etched and pitted. Naturally, blackened crystals of this type acquire a dull metallic luster after treatment typical of many marcasites, but in any case the overall appearance of the specimen is immensely improved.

Further tests showed that after the specimen has submerged for some time (an hour or so), the solution becomes yellowish and even slightly greenish, no apparent harm being done even by this unduly prolonged immersion. No doubt, too, this same solution will be found serviceable also in cleaning such tarnished minerals as native silver and other species unduly darkened by heavy metal sulfide films, but it is advisable in every case to proceed with caution, or to test fragments first by trial dips.

Caution!

A word of extreme caution regarding the use of sodium (or potassium) cyanide, sometimes termed "Sugar of Sudden Death." This chemical is one of the most deadly poisons known, and special care must be exercised when using it not to allow it or its solution to come in contact with a cut or scratch, or in any way to be transferred to the mouth. Keep the reagent and solution beyond reach of children or animals, and throw the solution away immediately after use. Because of its very poisonous nature, difficulty may be experienced by some in obtaining the salt, but it may be purchased at certain chemical supply houses.

*The Cleaning and Restoration of Specimens of Native Copper, *Rocks and Minerals*, Vol. 10, p. 156, October, 1935.

OVERITE AND MONTGOMERYITE

The American Mineralogist[1] of May, 1940, announces two new minerals discovered in the variscite nodules of Fairfield, Utah. These minerals have been named Overite, after Mr. Edwin Over, of Colorado Springs, Colo., and Montgomeryite, after Mr. Arthur Montgomery, of New York City.

Overite[2] occurs as pale green to colorless vitreous crystals in cavities in the variscite nodules. The nodules in which it is found are made up chiefly of banded intergrowths of pseudowavellite and what is believed to be deltaite, and generally have a kernel of variscite which is slightly smaller than the cavity it occupies. The overite partially surrounds and cements the variscite kernels to the surrounding pseudowavellite.

It is orthorhombic. H=4; Sp. Gr. =2.53. Formula $Ca_2Al_8(PO_4)_8(OH)_6 \cdot 15H_2O$.

Montgomeryite occurs as bright green to colorless crystals in cavities in the variscite nodules. More abundantly it occurs in the nodules as massive bands in the variscite and separating the variscite kernels from the outer alterations (principally pseudowavellite) of the nodules. These massive bands frequently contain cavities into which crystals have grown. Overite has not been found associated with montgomeryite, and gordonite has been found with it in only one nodule. Englishite one of the rarest of the minerals, very commonly occurs with it.

Montgomeryite was one of the late minerals to form, but was followed by granular coatings of pseudowavellite and a member of the apatite group which occurs as sheafs of radiating needles on montgomeryite crystals.

It is monoclinic. H=4; Sp. Gr. =2.53. Formula $Ca_4Al_5(PO_4)_8(OH)_5 \cdot 11H_2O$.

We congratulate these two members of the Rocks and Minerals Association in having the new minerals named after them.

Incidently, englishite and gordonite, mentioned above, were named after two other members of the Rocks and Minerals Association, Mr. George L. English, of Rochester, N. Y., and Mr. Samuel G. Gordon, of Philadelphia, Penn.

1 Overite and Montgomeryite: Two New Minerals from Fairfield, Utah. By Esper S. Larsen, 3d, pp. 315-326.

2 Abstract of overite previously published in Am. Min., 32, No. 12, pt. 2, p. 6 (1938).

TWO INTERESTING FINDS IN NORTH CAROLINA

During the latter part of August, 1939, O. Ivan Lee, of Jersey City, N. J., who was spending a two weeks mineral vacation in Spruce Pine, N. C., made two very interesting finds. The first was muscovite bordered with a wide margin of lilac mica from a new working near the McKinney Mine, which he named the Frank Fortner mine. So far as he knew, and Mr. Lee is an authority on North Carolina minerals, this was the first time that lilac mica had been found in Mitchell County (in which is Spruce Pine) or any of the other western counties of the state, although lepidolite had been reported from Kings Mountain quite some time ago. However, a spectrographic test showed that although the lilac mica contained a little lithia, it was essentially only lilac muscovite.

The second find was a massive specimen of gahnite, automolite or zinc spinel, which came from near Newdale, Yancey County. This is the first time that he had seen the mineral from North Carolina since the time he had collected two large "niggerheads," each weighing several pounds, from the English mica mine on two successive visits to Spruce Pine some 20 years ago. Gahnite was originally reported from the old Deake mine, now abandoned, in Spruce Pine. It has lately been found as little crystals with bornite and chalcopyrite at the Deer Park mine near Penland, about 3 miles northwest of Spruce Pine.

THE DISCOVERY OF ROMAN CEMENT

By DR. JAMES WATSON, F. I. C.
London, England

Having to examine an Indenture drawn up in the year 1811, I came upon this paragraph, which the legal mind had then conceived to safeguard or retain for the lord of the manor, certain privileges "Save and except and reserved out of this present grant and release, the benefit license and liberty of collecting Copperas stone, Rock stones and Noddles of clay or argillaceous productions used in the making of cement, and which are now or at any time hereafter may be found in, upon or about the seashores."

This related to a portion of land on the foreshore near Harwich, in the county of Essex, England, and the exact meaning of the above-mentioned minerals and rocks was not brought into question until the year 1937. As a consequence, I visited the site, which is just south of Harwich estuary, and in the clay which is about 150 feet high and washed by the sea at every tide, I found some of these Cement stones, rockstones or noddles (nodules) of clay together with Copperas stones.

Looking up an old gazetteer of Essex, I found that reference is made to this bluish-black clay with its tough horizontal layers of ovate or flattish masses of argillaceous limestone, called Septaria. These light brown coloured bulbous formations, about four inches in diameter, are formed of concentric layers of clayey limestone and often intersected by fissures of calcareous laminae.

It may be of interest to students of rocks and minerals to know that some of the largest industrial operations of modern times have had their origin in a quiet way, started by another seeker in byegone days. Burnt lime and pouzzolana, a volcanic ash from Italy, were considered to be the best materials for a hard, lasting and hydraulic lime. The search for a limestone containing a naturally formed proportion of argillaceous or clayey matter, had been stimulated by the tests carried out by Smeaton who was requiring a hydraulic mortar to use for the erection of the Eddystone lighthouse. To use his own words," the fitness of lime for water-building, the stone when burnt should contain a certain quantity of clay." The search for this material must have inspired James Parker, who picked up some of these light brown coloured and rounded cement stones or 'noddles,' as they were then called, on the Isle of Sheppy, Kent, for he tried to learn what the effect would be in calcining them in a lime kiln. Possibly to his astonishment he found that after burning, these lumps would not fall to powder when water was added to them, as the ordinary lumps of lime did. He further discovered that when ground to a fine powder and mixed with water, they set hard in about 30 minutes, the colour being dark red to a brownish red. The important point to us now is, that he placed the hardened parts of gauged material in water and found that they would not break up, as lime would have done.

He was so satisfied with the cementitious material he had made that he took out a patent in 1796 for this "Roman Cement." This stimulated other lime burners in the search for the material, and similar septaria nodules were found at Walton-le-Soken on the coast, and soon the production of Roman cement became a large industrial undertaking, as many as 300 boats at that time were engaged in dredging for these 'cement-stones' in the shoals opposite the town of Harwich.

The price then was 6/- to 8/- per ton, and even up to the year 1846, records state that "The demand for Cement Stone is now so extensive that the stock is now quite exhausted, and as much as $25000 per year was being paid in wages."

This discovery was the forerunner of the now extensive industrial processes producing artificial portland cement. The Copperas Stone mentioned, was another name for iron pyrite, and had long been

used when roasted and lixiviated to produce green vitriol (sulphate of iron) for fixing the vegetable dye on woollen materials. A Cyclopaedia of the year 1640 mentions them as "Coporis Stones," whilst as far back as the year 1565, I found that an Act of Parliament in Queen Elizabeth's reign, enacted that "No person shall dye black, but only with Copperas and Gall."

TWO ANSWERS TO "WHY THE 'DEVIL' "

Regarding your query in the June, 1940, issue of *Rocks and Minerals* as to why the devil is so frequently commemorated in geological literature, perhaps the following piece of information will give you a clue to the answer.

In looking through an old cabinet here at Drake, a few years ago, I came across a muslin wall-chart showing the stratigraphic column. Apparently the chart was either the one used by a former Secretary of the Iowa State Academy of Science when giving popular lectures on "Evolution", or else was copied from this Secretary's published pamphlets; for pinned to the chart is a clipping from what might well have been a folder distributed at the lecture, and the muslin chart is a reproduction of this clipping. This clipping shows the date "1880." The chart carries one column showing the type of life existing; starting at the bottom and reading up the column one finds:—Azoic Age,—Age of Zooliths,—Age of Invertebrates,—Age of Fishes,—Age of Amphibians,—Age of Reptiles,—Age of Mammals,—Age of Man,—Age of Angels. Now when you remember that we teach that evolution may be either PROgressive or RETROprogressive, and recalling the fact that present-day textbooks on geology no longer include the final life stage given above, am I not justified in thinking I may have given you a clue as to the proper answer to your question?

However, the devil does not have it all his own way, especially if one includes some geographical place names, too. If you will make a trip this summer by hydroplane, aeroplane, bus, or magic carpet, you might start your trip from Providence, R. I.,—then make a long hop to Mt. Olympus, Wash.,—go south to the City of The Angels, Calif.,—(incidently visiting various "saints" enroute), go east to the Grand Canyon and traverse the Bright Angel Trail,—on to Zion National Park and view "The Great White Throne" as well as various temples,—take a side-trip into Colorado and look at the Mount of The Holy Cross,—to Ogden, Utah, and you would be only some fifty miles from Paradise,—take the Union Pacific westward to central Nevada and thence drive north to Paradise Valley,—northeastward to North Dakota (avoiding Devils Lake, of course) and stop off at Valhalla,—north and some east of Winnipeg and come to rest on Gods Lake, — southeastward towards Chicago but stopping at Apostle Islands in western Lake Superior, St. Anthony's Falls, Sault Ste. Marie and Zion City,—thence almost to Montreal but staying on Isle Jesus,—and by that time perhaps you could understand some of the vicissitudes incident to living within commuting distance of New York City. But if you found next winter that 'the spirit was willing but the flesh was weak" your magic carpet could quickly whisk you to Walhalla, Georgia.

Lee O. Yoder,
Drake University,
Des Moines, Iowa.

Your WHY THE "DEVIL" for editorial provoked considerable favorable comment at our house and on the whole we are heartily in sympathy with your ideas on the subject. Why give the devil all the publicity and leave God the Creator out of the picture almost entirely.

On the other hand I do not believe that God's name should ever be used for any trivial little thing or for anything short of the *grand* or the *majestic*. There are plenty of other names to go around without calling on the deity.

You speak of God's Caves, Dens and Playgrounds, but did you ever stop to think about God's Dams? That just wouldn't do as it would sound too much like blasphemy. (That was intended for a pun and perhaps it wasn't a very nice one. Excuse it, please.)

Ben H. Wilson,
Joliet, Ill.

READING HILLS TOUR

A mineralogical tour through the jasper localities of Eastern Pennsylvania will be held on Sunday, Aug. 25, 1940.

See page 275, this issue, for more particulars.

NEW ENGLAND NOTES

Conducted by Rudolf C. B. Bartsch
36 Harrison St., Brookline, Mass.

Union, Conn. A new road is being built starting in this town and extending across country in a westerly direction. The main operation at present is at the Union end, and extends for miles. Another section starts at the main line between Stafford Springs and Willimantic which we did not have time to examine. A considerable amount of blasting of outcropping ledges has been completed with still more to be done. Much interesting material is thus being exposed. Most of the rock consists of schists containing a large amount of poorly formed pinkish garnet and an equally large amount of pyrite. This latter mineral causes a rapid disintegration of the material on exposure. A large amount of limonite is being formed which can be seen filling seams up to ½ inch in thickness.

There are, however, some interesting minerals to be found here. Oligoclase in rather large plates, translucent and in some cases nearly transparent, of a greenish color, is to be found in excellent specimens. One cavity with prehnite and calcite xls was secured. A vein of limestone produced an interesting find—coarse granular calcite containing crystals of pyroxene which are partially absorbed giving them a rounded appearance. A quick glance gave the impression of franklinite grains in calcite from Franklin, N. J. Several specimens of sphene were also found in the vein, as well as some amethyst.

The Boston Mineral Club held a three day field trip to New York and Connecticut localities on June 15-17. The first day was spent at the Tilly Foster, N. Y., dumps and many fine specimens were collected at this famous old iron mine. While this is not a New England locality, we feel we should mention one interesting specimen. A cavity containing an unusual crystal formation of colorless fluorite was found by the writer which caused considerable discussion. The crystals were cubes modified by the trapezohedron.

The second day was spent at the Mohopac iron mine dumps, near Lake Mohopac, N. Y., at the arsenic mine on the Gipsy Trail, near Carmel, N. Y.; and at the limestone quarry in Towners, N. Y. All three localities yielded many fine specimens. Here the party split—one group going to New York City to attend the Mineral Day at the World's Fair, and the other to visit some Connecticut localities on the way home.

A stop was made at the Collins Hill localities near Portland, Conn.

Our next stop was at the trap rock quarry in Plainville, Conn., where excellent specimens of calcite, prehnite and datolite xls were secured. Several fine groups of calcite xls of a long, thin, needle-like form were also found. These calcite xls give a pale green fluorescence under an ultra violet light.

Our last stop was at the trap rock quarry in Farmington, Conn. Here we collected excellent prehnite groups of very fine clear color and transparency. Much of the prehnite was covered with small, yellow, transparent xls of calcite which were nearly cubic in form. These calcite xls give a very strong greenish-yellow fluorescence even under the Argon bulb.

By this time the springs under the cars were getting rather flat and the collectors weary, so we called it a "day" and headed for home. The entire trip was a success and we think all members participating were well pleased and happy with their new material. Permission to enter the two trap rock quarries, which are in operation, was easily secured on application at the offices.

Don't take yourself too seriously, you might stumble over your own feet.

. . Collectors' Tales . .

By PETER ZODAC

TALES FROM OLD MEXICO

Martin L. Ehrmann, mineral dealer of New York City, was the guest speaker at the regular monthly meeting of the Plainfield Mineralogical Society held Tuesday, December 5, 1939, at the Public Library, Plainfield, N. J. A number of very amusing anecdotes were told covering his last trip to Mexico when, in company with Dr. Wm. F. Foshag, Curator of the U. S. National Museum, he visited a numer of mines for the purpose of collecting minerals.

Mr. Ehrmann noticed, among many things, that the men (natives) rode on donkeys while their wives walked behind them. Being curious why this was so he asked one native the reason. "Huh", replied the Indian, "she no got donkey."

He was riding in a train one day which crawled along so slowly that an impatient American in the same coach began to fume and rave. When the conductor happened to pass by, he was stopped by the impatient one. "Can't you go faster than this?"

"Yes, I can," he replied naively, "but I am the conductor and must stay with the train."

They reached a mine one day which was noted for its fine crystals. They found little or nothing on the dumps and inquiring of the miners if they had any specimens were answered in the negative. "We want to buy crystals and have money to pay for them, "they insisted. "Not got, no see," greeted them on every side. The miners were so indifferent to their pleas that they left the spot in disappointment with the idea of also leaving the town early next morning. That evening while at their hotel a call came for them and in trudged a miner with his pockets full of crystals. Soon another miner arrived, then another, and another until finally there was a string of them, each with crystals for sale. The astonished collectors bought up the crystals without delay and on making inquiries learned that the mining company forbids its men to sell minerals. Thus no miner had given them a favorable reply for fear of losing his job.

READING HILLS TOUR

A mineralogical tour through the jasper localities of Eastern Pennsylvania and conducted by Richmond E. Myers, Director of Tours, will be held on Sunday, August 25, 1940.

The tour will start at 9:00 a.m., D. S. T., from Center Square (south side) in Easton, Penna. The itinerary is being arranged to have the group reach Lost Cave, (one-half mile east of Hellertown. Penn.) at 1:00 p. m. where time out for lunch will be taken. Here sandwiches and soft drinks may be purchased but those desiring a bigger meal should bring their lunches with them. The lunch period will offer an opportunity to enter the cave itself, if desired—the admission price is 75c and well worth it).

Those planning to attend the tour should register at their earliest with Mr. Myers, Dept. of Geology, Muhlenberg College, Allentown, Penna. It is suggested, for ease in identification, that members should display the Association emblem on their cars.

(See July, 1940, *Rocks and Minerals,* pp. 222-225, for the itinerary and bring the copy with you on the tour).

BIBLIOGRAPHICAL NOTES

Mining Industry and Statistics of the Province of Quebec for the Year 1938:

The total value of the products of the mines and quarries of the Povince of Quebec, Canada, in 1938, amounted to $68,877,345. As compared with the previous year, this is an increase of $3,673,369, or 5.6 per cent, and it establishes a new high record for the mineral industry of the Province.

The bulletin, containing 130 pp., 3 pl., is issued by the Bureau of Mines, Quebec, Canada.

A Check List of the Fossil Birds of North America: By Alexander Wetmore.

The list as here published includes records of 165 forms that are still living, and of 184 species recorded only in the extinct state. There are 12 additional forms in a hypothetical list, the status of which is uncertain and which are not included in the tabulation just given. The list is complete so far as records show up to January, 1940.

Issued by the Smithsonian Institution. Washington, D. C., June 18, 1940, 81 pp.

Cutting and Polishing Stones: By M. M. von Bernewitz and Frank Hess.

Because the cutting and polishing of stones are parts of the work of the U. S. Bureau of Mines in its study of rocks and minerals and in the determination of specimens sent in for identification, it was decided that a circular covering the subject in a general way would be of practical interest.

Issued by the U. S. Bureau of Mines, Washington, D. C. (April, 1940) as Information Circular 7107, 23 pp., 25 figs.

The Geological Review: It is a pleasure to annouce that the Geological Society of the City College of New York, New York, N. Y., has begun the issuance of a journal devoted to geology. Jerome Oberman, '41, is Editor-in-Chief. The first issue, Vol. 1, No. 1, May, 1940, consisting of 10 pages, carried the following articles "Rocks of New York City," by Sidney Walovnick, '41; "The Java Man," by Norman Moglen, '40; "Seismotectonic Lines," by Prof. Daniel T. O'Connell; "From New York City to the Delaware Water Gap," by Abe Naddelman, '40; "A Trip to the New Jersey Coastal Plain," by Dr. Cecil H. Kindle; "Geysers," by Roy Van Santen and "Resume of Club Activities," by Jerome Oberman, '41.

Our congratulations are extended to the Geological Society of C. C. N. Y. on their first venture in the literary field. May the *Geological Review* grow and prosper is our sincere wish.

Experiments on the Thermoluminescence of Some Common and Unusual Minerals: By M. Allen Northup and O. Ivan Lee.

The purpose of this paper is to note some of the qualitative aspects of thermoluminescence which is of a complex nature, to correlate this property if possible with other forms of luminescence, and to assemble a list of readily available minerals for the convenience of future investigators.

This very interesting paper, prepared by two members of the Rocks and Minerals Association, appeared in the *Journal of the Optical Society of America*, Vol. 30, No. 5, May 1940, pp. 206-223.

CURRENT MINING ACTIVITIES IN SOUTHERN CALIFORNIA

The Division of Mines, Department of Natural Resources, under the direction of Walter W. Bradley, State Mineralogist, announces the release of the January, 1940, issue of California Journal of Mines and Geology, being Chapter 1 of State Mineralogist's Report XXXVI. This issue contains a report on Current Mining Activities in Southern California covering a survey of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside San Bernardino and San Diego Counties both as to Metal and Nonmetallic mining activities, by W. B. Tucker and R. J. Sampson of the Los Angeles Field District.

There follows two special Articles, "Notes on Beryl, with a Qualitative Analysis for Beryllium," by George L. Gary, Mineral Technologist of the Division of Mines, and an outline of the work being done by the U. S. Bureau of Mines in gathering data on the Strategic Mineral Resources of the country entitled "Strategic Minerals Investigations Procedure followed by the U. S. Bureau of Mines." This clearly sets forth what the owners of deposits of such minerals as antimony, chromium, manganese, mercury, nickel, tin and tungsten should do in order that such resources may become available in case of emergency.

Current notes of the Geologic Branch give an outline of Part 1 of the new Bulletin 118, "Geologic Formations and Economic Development of the Oil and Gas Fields of California," now is press.

The usual notes on Statistics, Laboratory and Library complete the number. Price 60c postpaid, plus 2c sales tax to residents of California. All publications of the Division of Mines are for sale at the San Francisco, Los Angeles and Sacramento offices.

Geology of the Presidential Range: By Richard P. Goldthwait.

The Presidential Range of New Hampshire, which includes Mt. Washington, has been carved out of a tremendously thick mass of crumpled rocks, 'Sculpturing" by streams and glaciers have formed deep valleys, ravines, and the notches which give height to the peaks of the celebrated White Mountains.

Issued by the New Hamphire Academy of Science, Hanover, N. H., as Bulletin No. 1 (1940), 43 pp., 22 figs.

New Occurrence of Bornite in Virginia

Dr. Titus Ulke, of Washington, D. C., announces the recent discovery of bornite in the Fairfax Quarry near Centerville, Va., (25 miles from Washington, D. C.) The bornite is found in isolated concentrations of an inch or more in diameter in hard diorite (commercial traprock) and is practically free from association with other minerals and when exposed to the weather is covered with a beautiful peacock-blue patina.

CLUB AND SOCIETY NOTES

Mineralogical Club of Hartford, Conn.

The June 9th field trip to the siderite mine on Mine Hill, Roxbury Sta., Conn. (arsenopyrite, pyrite, quartz xls, siderite and sphalerite collected) and to the garnet mine at Roxbury Falls, Conn., (almandite garnets collected) was a most successful event. Fourteen members were in the party.

The fourth field trip of the year will be held on Sunday, August 18th, to the noted talc quarry near Chester, Vermont. This locality, which has become very prominent during recent years for its very fine pyrite crystals, contains a number of interesting minerals to intrigue collectors.

Contact Mrs. R. F. Hills 35 Manchester St., Hartford, Conn. (Tele. Hartford 2-1728) regarding time and place of departure. Bring lunch.

New Haven Mineral Club

The fifth field trip of the year will be held on Sunday, August 18th, to the noted tungsten mine on Long Hill, Trumbull, Conn. This famous old abandoned mine and the adjacent topaz locality have for many years attracted collectors from near and far.

Contact Mrs. Sadie Crowley (Tele. New Haven, Conn. 6-5900) regarding time and place of departure.

Mineralogical Society of Springfield, Vermont

The Society has been active since its organization in 1934 and many fields trips have been made to interesting mineral localities in Vermont, New Hampshire, and Massachusetts.

The officers for 1940 are Carlton T. Gosselin, President; Leroy S. Bradeen, Vice-President; and Victor T. Johnson, Secretary-Treasurer.

The Society recently affiliated with Rocks and Minerals Association.

Southwest Mineralogists

THE SOUTHWEST MINERALOGISTS held their election of officers at their May 24th meeting in Los Angeles, California. The officers elected were: Harold E. Eales, President; C. S. Standridge, Vice-President; Mrs. Jean Lippett, Secretary, Mrs. Pearle Arnold, Corresponding Secretary; and J. W. Collins, Treasurer. John Akers, former President, and Albert Hake were named as permanent Directors. Mrs. Gladys Eales, Mrs. Hager, Gilbert E. Arnold, Fred Mason, Sam Taylor, Charlie Herman, and Dr. McKibbon were also selected as Directors.

At the May 31st meeting of the Southwest Mineralogists, Victor Arcienega, Instructor of Mineralogy, Geology, and Petrology, in Manuel Arts Evening School at Los Angeles, California, gave a fine lecture on the Identification of Various Types of Igneous Rocks. The talk served as an excellent introduction for the further study of the new set of igneous rocks, which has been purchased by this minera club.

Federation Preparing for Convention

The Northwest Federation of Mineralogical Societies will hold its convention at the Davenport Hotel in Spokane, Wash., on October 12 and 13th.

All committees have been appointed by the host organization, The Columbian Geological Society, and good progress has been attained to date.

It is planned to make this equal to if not superior to the former federation conventions at Olympia, Wash.; Portland, Ore.; and Seattle, Wash.

There will be a good program of speakers, exhibits of minerals and amateur lapidary work and commercial exhibits. Prizes of minerals, lapidary equipment and ribbons will be awarded to exhibitors, both personal and those of society groups.

Field trips and sightseeing tours will also be arranged.

COLLECTOR'S KINKS

Collectors are cordially invited to submit notes from their experiences and so make this department of interest to all.

It has been noticed that some collectors who wear glasses have an old pair for field collecting. They have learned by experience that in the hammering of rocks their glasses become chipped by the constant bombardment of minute fragments of rock against them.

A small whiskbroom is a valuable asset to a collector's equipment. Many a time a dirty or dusty slab or ledge of rock is encountered—use a whiskbroom instead of a handkerchief to clean it.

Another handy article for a collector is a small rake (child's toy). In the search for loose crystals in soil or decomposed rock, a small rake is ideal for the job.

Those collectors who have a tendency to wear a magnifying glass suspended from a cord are cautioned in not allowing the glass to remain open when not in use. In the hammering of rocks, the flying fragments may hit the glass and chip it—thus marring its usefulness.

A pencil has the annoying habit of falling out of one's pocket and becoming lost. Tie one to your notebook in the future.

COLLECTORS DO CRAZY THINGS

Collectors often do the craziest things in order to obtain choice mineral specimens for their collections but have you ever heard of anything crazier than going on a collecting trip at midnight? It wasn't after fluorescent minerals either but common pyrite. And the leader of the party, of all people, was our own good-looking president, R. Emmet Doherty.

It all happened like this. On Tuesday afternoon, July 2nd, some very brilliant drusy pyrite encrusting tabular calcite was found in the South Tunnel of Aqueduct Shaft No. 7 near Fishkill, Dutchess County, N. Y. Specimens of this pyrite were shown Mr. Doherty, who is geologist for the contractors at the shaft, and it got him all excited. Instead of rushing to the tunnel at his first opportunity, as an ordinary collector would do, he rushed to arrange for a trip to take place that very night which would include Leo Komiakoff, (Inspector at the shaft and a member of the Rocks and Minerals Association), and the male nurse, a Mr. Ashton. As Mr. Komiakoff was to report for duty at 12:00 (midnight), the trip was purposely held at this late (or early hour) so that he could be a member of the party.

The crazy part of a whole trip was that the Editor of *Rocks and Minerals* was not invited to accompany the party. Considering the very fine quality of the specimens found the Editor might have been crazy enough to accompany them. For midnight and midday are all the same to one working in a tunnel.

New Locality for Antlerite

On a recent trip by the Arizona Mineral Society to the Silver King Mine, near Pinal, Pinal County, Arizona, antlerite was found by Arthur L. Flagg of Phoenix. This is the first time that antlerite has been found at this locality which is one of Arizona's historic mines.

Attention Members

If you are beginning a collection of minerals and need assistance in identifying, arranging and displaying specimens, send in your name and address to the Secretary for posting in *Rocks and Minerals*. If you are under 21, send in your age, too.